

II. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings.

1. (Currently Amended) A seal assembly comprising:

a leaf seal including a plurality of staggered leaf seal members, each leaf seal member including:

a free portion adapted to be angled relative to ~~both~~ a longitudinal axis and longitudinally angled relative to all radial axes of a component to be sealed against; and

a fixed portion that is angled relative to the free portion and adapted to be one of substantially parallel to and substantially perpendicular to the longitudinal axis of the component to be sealed against; and

a support coupled to a low pressure side of the leaf seal for supporting the free portion, the support having a support portion facing a high pressure side of the leaf seal, wherein the free portion contacts a distal end of the support portion in a pressurized operative state and is out of contact with the distal end in an unpressurized inoperative state, the fixed portion of the leaf seal is angled relative to the free portion in both the operative and inoperative states, and the free portion is adapted to be closer to the component to be sealed against during the pressurized operative state than in the unpressurized inoperative state.

2. (Previously Presented) The seal assembly of claim 1, wherein each leaf seal member includes a first layer including a first material addressing a high pressure side of the leaf seal and a second layer of a second material addressing a low pressure side of the leaf seal, wherein the first material has a lower coefficient of thermal expansion than the second material.
3. (Original) The seal assembly of claim 1, wherein the support portion includes a curved surface extending from a proximate end of the support portion to the distal end, and the free portion extends tangentially from the curved surface in the inoperative state.
4. (Original) The seal assembly of claim 3, wherein the proximate end is coupled to a mount portion of the support that mounts the support to a stationary component.
5. (Cancelled)
6. (Original) The seal assembly of claim 1, wherein the plurality of staggered leaf seal members are provided by a spiral of a single strip of material.
7. (Original) The seal assembly of claim 1, wherein the plurality of staggered leaf seal members are fixed together at the fixed portion by a weld.

8. (Previously Presented) The seal assembly of claim 1, wherein the fixed portion is positioned substantially perpendicular to a longitudinal axis of a component to be sealed, and the free portion is angled out-of-plane relative to the fixed portion.

9. (Currently Amended) A seal assembly for sealing a rotatable component, the seal assembly comprising:

a leaf seal including a plurality of leaf seal members, the leaf seal including a fixed portion that is angled relative to a free portion thereof;

a support coupled to a low pressure side of the leaf seal for supporting the free portion of each seal member, the support including a support portion facing a high pressure side of the leaf seal; and

wherein the fixed portion is adapted to be positioned substantially perpendicular to a longitudinal axis of the rotatable component, the free portion is adapted to be angled relative to ~~both~~ a longitudinal axis and longitudinally angled relative to all radial axes of the rotatable component and is angled out-of-plane relative to the fixed portion in both a pressurized operative state and an unpressurized inoperative state.

and wherein the free portion contacts a distal end of the support portion in the pressurized operative state and is out of contact with the distal end in the unpressurized inoperative state and the free portion is adapted to be closer to the rotatable component during the operative state than in the inoperative state.

10. (Cancelled)

11. (Currently Amended) The seal assembly of claim [[10]] 9, wherein the distal end of the support portion is thinner than a proximate end of the support portion, and the proximate end is in contact with the free portion in the inoperative state.

12. (Original) The seal assembly of claim 11, wherein the support portion includes a curved surface extending from the proximate end to the distal end.

13. (Original) The seal assembly of claim 11, wherein the proximate end of the support portion is coupled to a mount portion of the support that mounts the support to a stationary component.

14. (Cancelled)

15. (Original) The seal assembly of claim 9, further comprising a holder for mounting the seal assembly to a stationary component, wherein the holder includes a projection for protecting the free portion.

16. (Original) The seal assembly of claim 9, wherein the fixed portion is provided by an arcuate member in each leaf seal member.

17. (Previously Presented) The seal assembly of claim 9, wherein a free end is at least one of axially parallel a surface of the rotatable component, and circumferentially parallel a surface of the rotatable component.

18. (Original) The seal assembly of claim 9, wherein each leaf seal member includes a first layer including a first material addressing a high pressure side of the leaf seal and a second layer of a second material addressing a low pressure side of the leaf seal, wherein the first material has a lower coefficient of thermal expansion than the second material.

19. (Currently Amended) A rotary machine comprising:

a rotatable component and a non-rotatable component, the components lying about a common axis;

a seal assembly between the components, the seal assembly including:

a leaf seal including a plurality of staggered leaf seal members, the leaf seal including a fixed portion that is angled relative to a free portion thereof; and

a support coupled to a low pressure side of the leaf seal for supporting the free portion, the support having a support portion facing a high pressure side of the leaf seal,

wherein the free portion contacts a distal end of the support portion in a pressurized operative state and is out of contact with the distal end in an unpressurized inoperative state, the free portion is angled relative to both a longitudinal axis and longitudinally angled relative to all radial axes of the rotatable component, the fixed portion of the leaf seal is angled relative to the free portion in both the operative and inoperative states, and wherein the free portion is adapted to be closer to the rotatable component during the pressurized operative state than in the unpressurized inoperative state.

20. (Original) The rotary machine of claim 19, wherein each leaf seal member includes a first layer including a first material addressing a high pressure side of the leaf seal and a second layer of a second material addressing a low pressure side of the leaf seal, wherein the first material has a lower coefficient of thermal expansion than the second material.

21. (Original) The rotary machine of claim 19, wherein the support portion includes a curved surface extending from the proximate end to the distal end.

22. (Cancelled)

23. (Previously Presented) The rotary machine of claim 19, wherein the fixed portion is positioned substantially perpendicular to a longitudinal axis of a component to be sealed, and the free portion is angled out-of-plane relative to the fixed portion.

24. (Currently Amended) A method of fabricating a seal assembly for sealing pressurized chambers of a rotary machine having a stator body and a rotor, the method comprising the steps of:

- (a) forming a frustoconical leaf seal including a plurality of leaf seal members, the leaf seal including a fixed portion that is angled relative to a free portion thereof in an operative and inoperative state, the free portion being adapted to be angled relative to both a longitudinal axis and longitudinally angled relative to all radial axes of a component to be sealed against; and
- (b) coupling the leaf seal to a support, including a support portion, such that the free portion contacts a distal end of the support portion in an operative state and is out of contact with the distal end in the inoperative state,

wherein the free portion is adapted to be closer to the component to be sealed against in the operative state than in the inoperative state.

25. (Withdrawn) A support for use with a leaf seal having a fixed portion and a free portion permanently angled relative to the fixed portion, the support including:
a mount portion for mounting the fixed portion; and
a support portion for supporting the free portion of the leaf seal, the support portion including a proximate end for contacting the free portion in an operative state and an inoperative state of the leaf seal, and a distal end for contacting the free portion in an operative state and is adapted to be out of contact with the free portion in an inoperative state of the leaf seal.

26. (Currently Amended) A seal assembly comprising:

a leaf seal including a plurality of staggered leaf seal members, the leaf seal including a fixed portion that is angled relative to a free portion thereof in an operative and inoperative state, the free portion being adapted to be angled relative to both a longitudinal axis and longitudinally angled relative to all radial axes of a component to be sealed against; and

a support coupled to the leaf seal for supporting the free portion,
wherein each leaf seal member includes a first layer including a first material addressing a high pressure side of the leaf seal and a second layer of a second material addressing a low pressure side of the leaf seal, the first material has a lower coefficient of thermal expansion than the second material, and the free portion is adapted to be closer to the component to be sealed against in the operative state than in the inoperative state.